

## CLAIMS

What is claimed is:

1. A method for assembling an electronic device package comprising:  
forming a package shell having an aperture formed in a top surface thereof and a bottom-side cavity formed in a bottom surface thereof and in communication with the aperture, the bottom-side cavity having an outside perimeter that is larger than an outside perimeter of the aperture to form a cavity top surface in the bottom-side cavity;  
forming at least one solder pad on at least the bottom surface of the package shell;  
mounting an optically interactive microelectronic device having an active surface within the bottom-side cavity such that at least a portion of the active surface is exposed through the aperture;  
depositing a transparent encapsulant within the aperture to cover the at least a portion portion of the active surface exposed therethrough; and  
covering the aperture with a transparent lid.
2. The method of claim 1, wherein depositing a transparent encapsulant comprises depositing the transparent encapsulant to a level that fills the aperture and covers a portion of the top surface of the package shell surrounding the aperture.
3. The method of claim 2, wherein covering the aperture with a transparent lid comprises:  
lowering the transparent lid onto the top surface of the package shell; and  
holding the transparent lid in place by adhesion to the transparent encapsulant.
4. The method of claim 3, wherein the optically interactive microelectronic device has a plurality of side surfaces, and further comprising:  
squeezing the transparent encapsulant out of a bottom side of the aperture within the bottom-side cavity to at least partially encase at least one side surface of the plurality of side surfaces of the optically interactive microelectronic device.

5. The method of claim 4, further comprising:  
leaving a back surface of the optically interactive microelectronic device exposed within the  
bottom-side cavity.
6. The method of claim 1, wherein mounting an optically interactive microelectronic  
device comprises:  
forming at least one terminal pad on the cavity top surface that is operably coupled to the at least  
one solder pad;  
forming at least one conductive element on the active surface of the optically interactive  
microelectronic device; and  
bonding the at least one conductive element to the at least one terminal pad.
7. The method of claim 6, wherein forming at least one conductive element  
comprises forming at least one conductive bump on the active surface of the optically interactive  
microelectronic device.
8. The method of claim 7, further comprising:  
forming the at least one terminal pad and the at least one conductive bump to comprise gold.
9. The method of claim 1, further comprising:  
selecting the optically interactive microelectronic device to be an image sensor chip.
10. The method of claim 1, wherein forming a package shell further comprises  
forming the package shell of a ceramic.
11. The method of claim 1, further comprising:  
forming the transparent lid of glass.

12. A method for assembling an electronic device package comprising:  
forming a package shell having an aperture formed in a top surface thereof and a bottom-side cavity formed in a bottom surface thereof and in communication with the aperture, the bottom-side cavity having an outside perimeter that is larger than an outside perimeter of the aperture to form a cavity top surface in the bottom-side cavity;  
forming a ledge surface in the bottom surface of the package shell around the bottom-side cavity;  
forming at least one solder pad on the package shell at least onto the bottom surface of the package shell;  
covering the aperture with a transparent lid;  
mounting an optically interactive microelectronic device having an active surface within the bottom-side cavity such that at least a portion of the active surface is exposed through the aperture; and  
covering the bottom-side cavity with a backing cap.

13. The method of claim 12, wherein forming a package shell further comprises forming the package shell of a ceramic.

14. The method of claim 13, wherein covering the aperture with a transparent lid comprises integrally forming the transparent lid with the package shell during a ceramic firing process.

15. The method of claim 12, wherein covering the aperture with a transparent lid comprises:  
forming a depression in the top surface of the package shell; and  
seating the transparent lid within the depression.

16. The method of claim 12, wherein covering the aperture with a transparent lid comprises hermetically bonding the transparent lid to the package shell with an adhesive material.

17. The method of claim 12, wherein mounting an optically interactive microelectronic device comprises:  
forming at least one terminal pad on the cavity top surface that is operably coupled to the at least one solder pad;  
forming at least one conductive element on the active surface of the optically interactive microelectronic device; and  
bonding the at least one conductive element to the at least one terminal pad.

18. The method of claim 17, wherein forming at least one conductive element comprises forming at least one conductive bump on the active surface of the optically interactive microelectronic device.

19. The method of claim 18, further comprising:  
forming the at least one terminal pad and the at least one conductive bump to comprise gold.

20. The method of claim 12, wherein covering the bottom-side cavity with a backing cap comprises:  
forming a compression member on the backing cap; and  
contacting a back surface of the optically interactive microelectronic device with the compression member.

21. The method of claim 20, wherein forming a compression member comprises forming at least one gold trace on the backing cap.

22. The method of claim 12, wherein covering the bottom-side cavity with a backing cap comprises:  
hermetically sealing the backing cap to the ledge surface with an adhesive material.

23. The method of claim 12, further comprising forming the backing cap of a ceramic.

24. The method of claim 12, further comprising:  
selecting the optically interactive microelectronic device to be an image sensor chip.

25. The method of claim 12, further comprising:  
forming the transparent lid of glass.